

### Abstract of the Disclosure

A method of forming a silicon-germanium layer on an insulator includes preparing a silicon substrate; depositing a layer of silicon-germanium on the silicon substrate to form a silicon/silicon-germanium portion; implanting hydrogen ions in the silicon-germanium layer; preparing an insulator substrate; bonding the silicon/silicon-germanium portion to the insulator substrate with the silicon-germanium layer in contact with the insulator substrate to form a bonded entity; curing the bonded entity; and thermally annealing the bonded entity to split the bonded entity into a silicon/silicon-germanium portion and a silicon-germanium-on-insulator portion and to relax the silicon germanium layers.